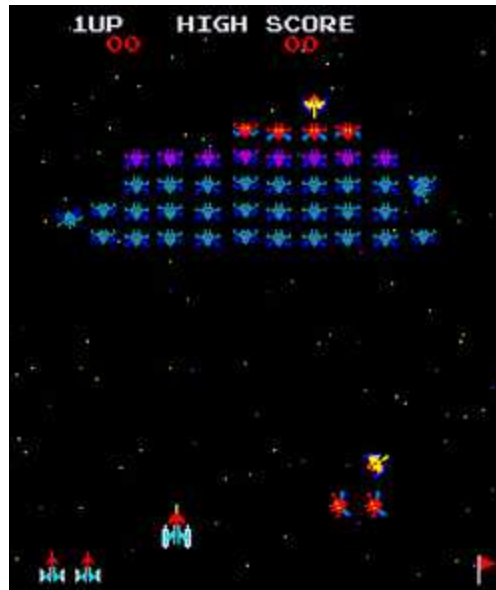


Interactive Shooting Game: Galaxian



(Image courtesy of wikipedia.org)

Danny Vo and Jeff Yuan

Galaxian: History

- Based on the formula developed by Space Invaders
- Released by Namco in 1979
- First arcade game to feature true color
- Spawned a host of sequels, Galaga (1981), Galplus (1984), Galaga '88 (1987), etc.

Game Rules

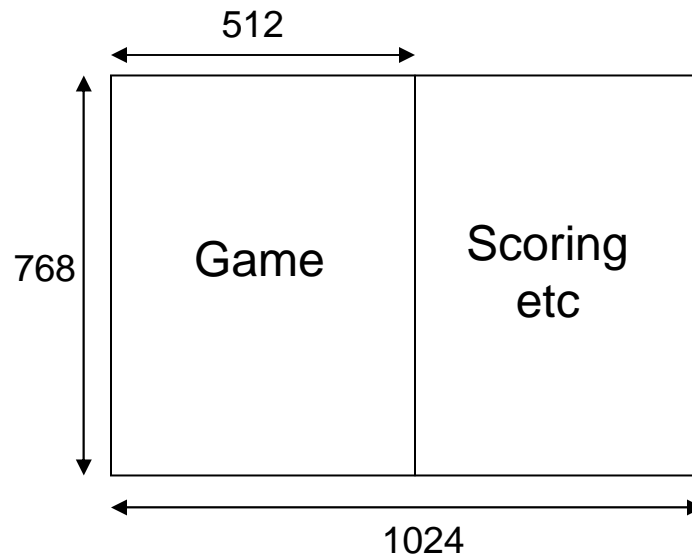
- Player controls ship located at bottom of screen
- Groups of aliens (up to 15-25) are located at the top of the screen
- The player attempts to destroy the aliens by firing projectiles that travel vertically upward
- Occasionally, aliens move away from their formation and makes a kamikaze attack at the player's ship
- Each level is over when the player destroys all aliens on the screen or when the player's ship is destroyed

Controller Schemes

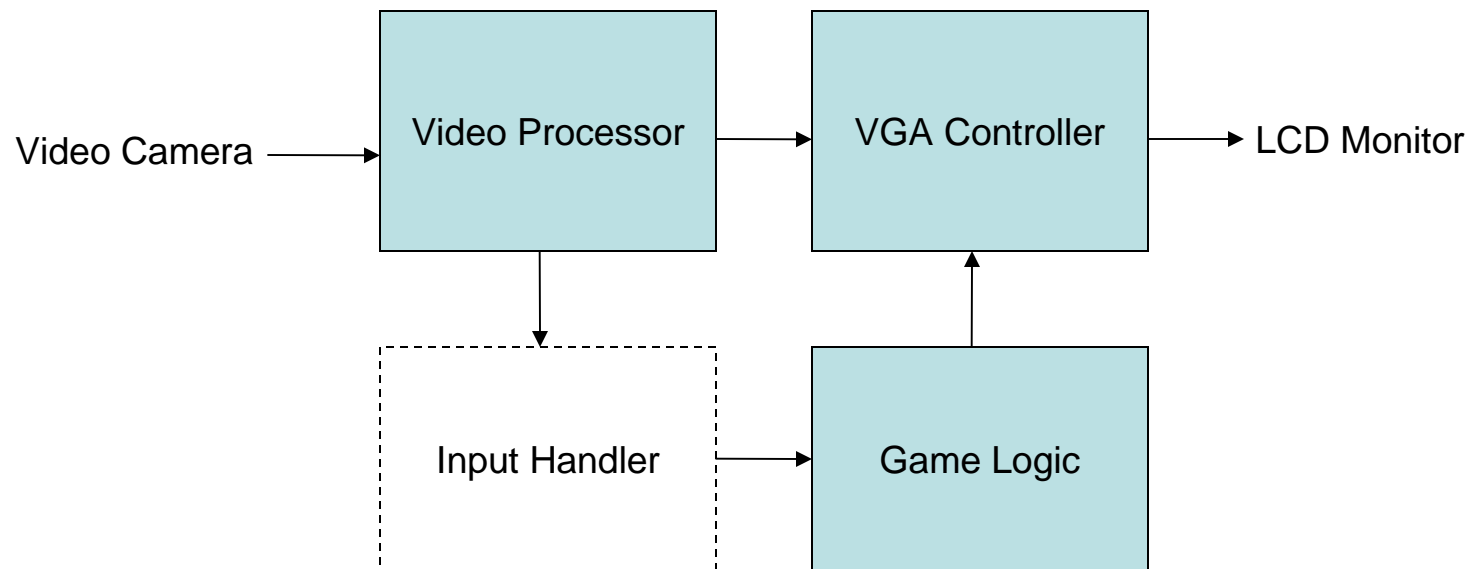
- Player ship is controlled by left to right movement of an LED board in front of a video camera.
- If the LED controller moves upward with a certain velocity, a firing action is registered.
- Optionally, keyboard can also be used as controller

Display

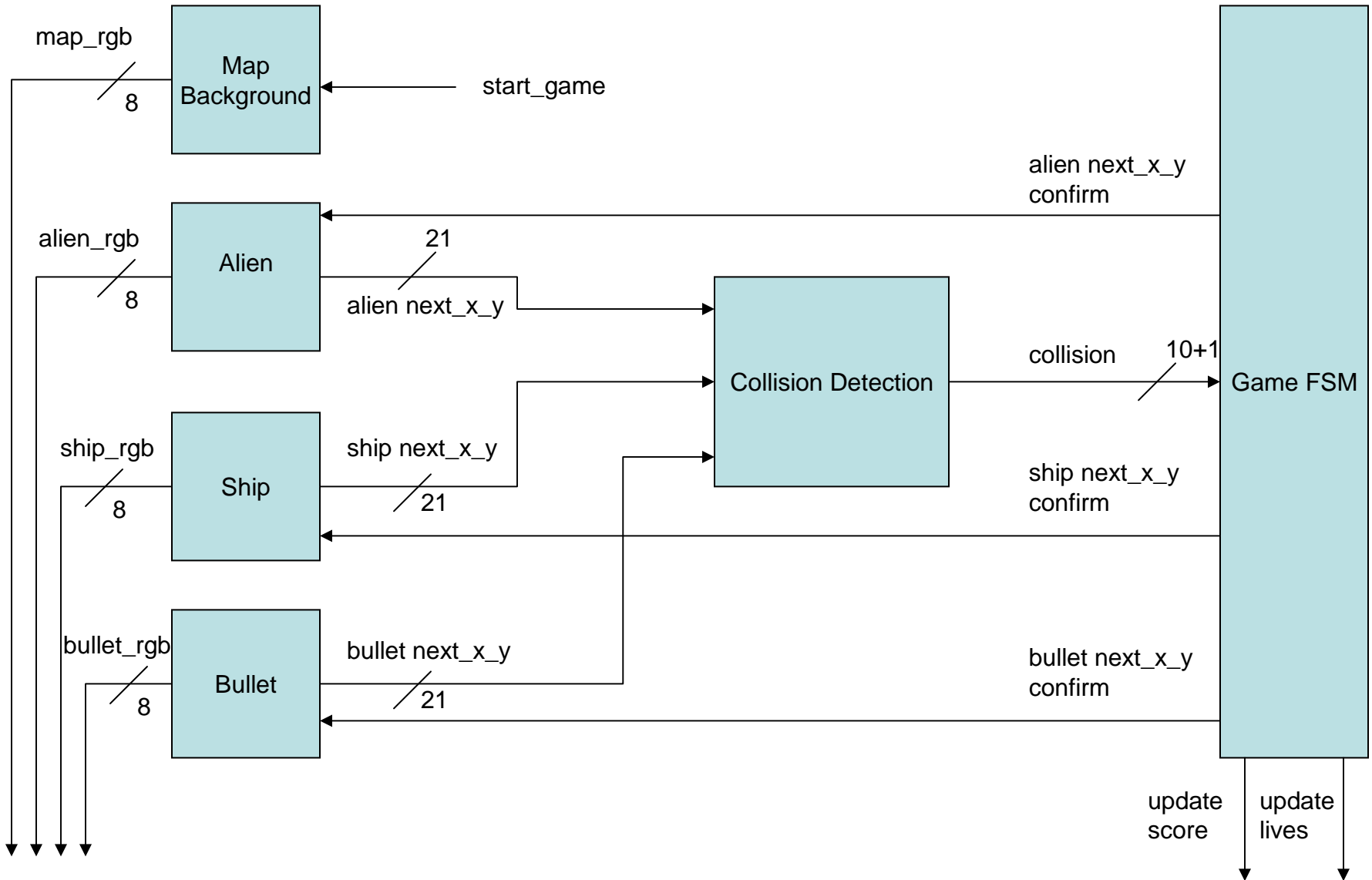
- XVGA Resolution: 1024 by 768. Clock at 65Mhz.
- Will only use half of the screen for game, since it is vertical in nature. So game resolution is 512 by 768.



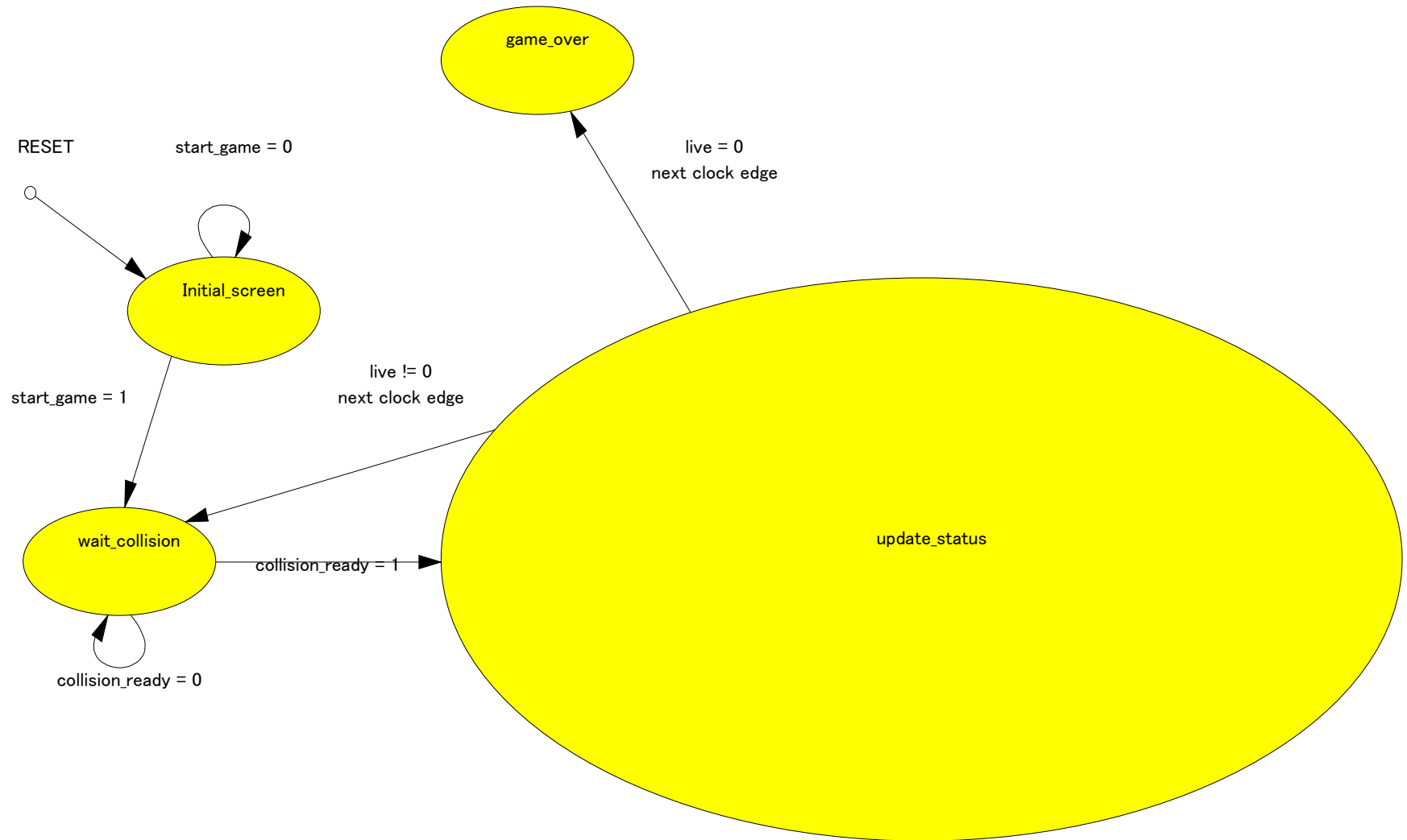
High Level Overview



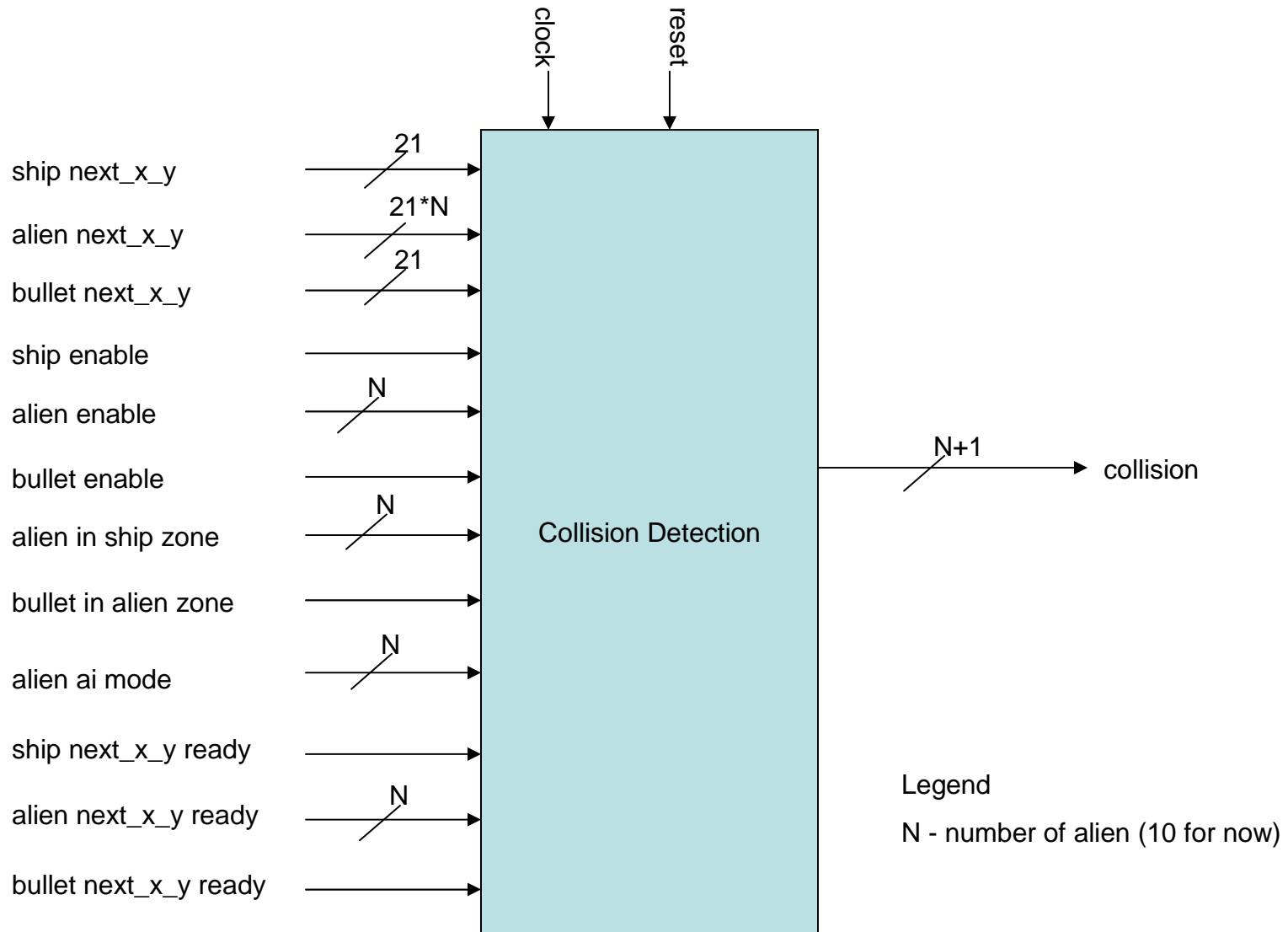
Game Logic



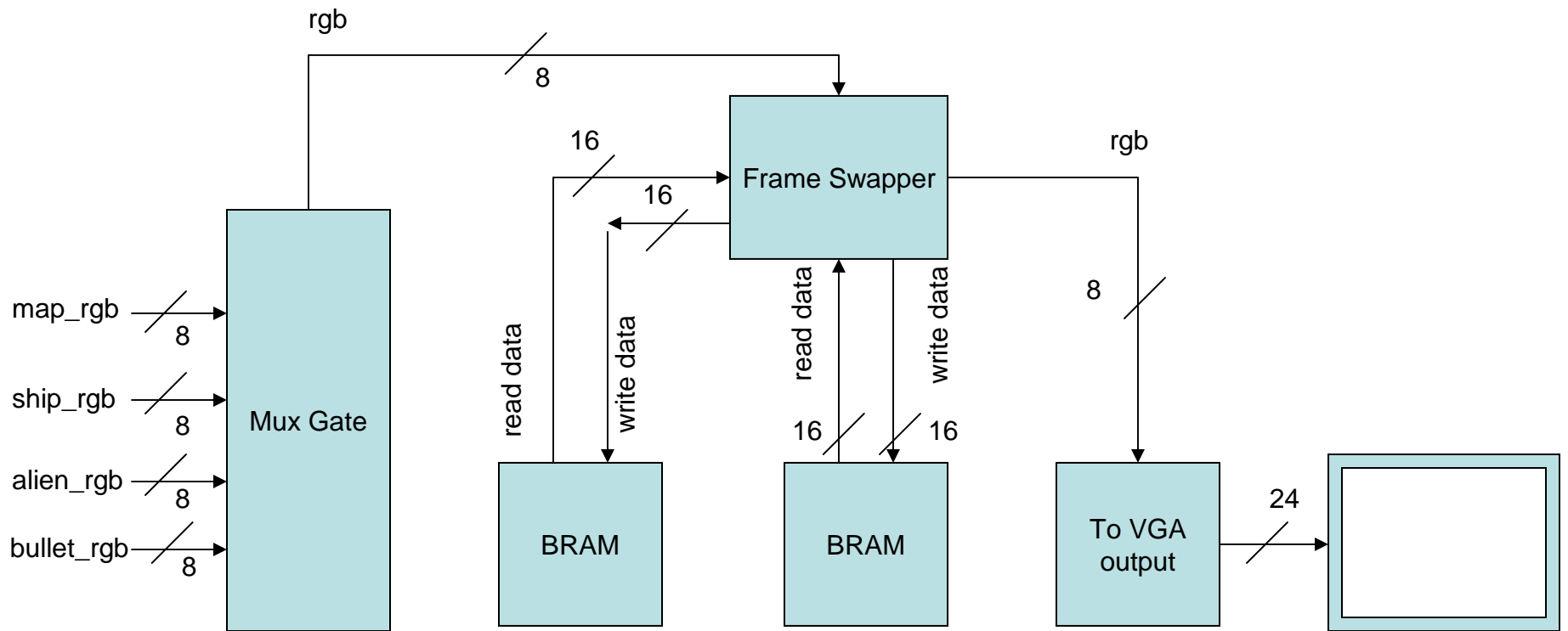
Game FSM



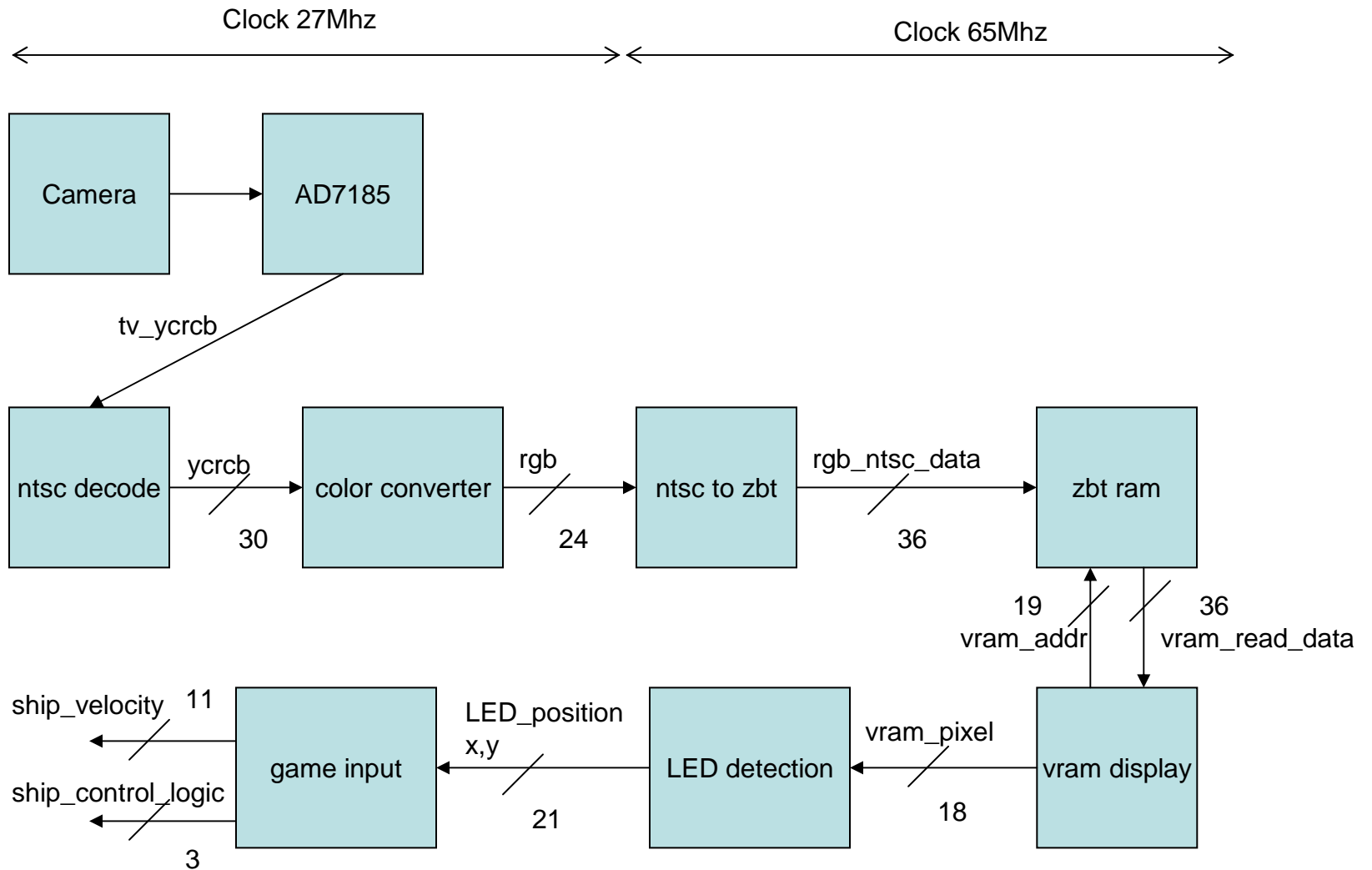
Collision Detector



VGA Output



Video Processing



Project Timeline

- 11/17:
 - Video processing
 - Ship, bullet, alien module, should be able to run simple test version
- 11/21:
 - Game FSM, Collision detector:
 - Sprite and ROM
- 11/29:
 - VGA output
 - Full game working
 - Integration

Questions?